

**Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal Form**

Section 1. General administrative information

Irrigation Diversion Consolidations & Water Conservation; Upper Salmon River, Idaho

Bonneville project number, if an ongoing project 9600700

Business name of agency, institution or organization requesting funding

Custer County Soil & Water Conservation District

Business acronym (if appropriate) CS&WCD

Proposal contact person or principal investigator:

Name	<u>Mr. Rick Philips, Contracting Officer</u>
Mailing Address	<u>P.O. Box 305</u>
City, ST Zip	<u>Challis, Idaho 83226</u>
Phone	<u>(208)-879-4428</u>
Fax	<u>(208)-879-4428</u>
Email address	<u>N/A</u>

Subcontractors. List one subcontractor per row; to add more rows, press Alt-Insert from within this table

Organization	Mailing Address	City, ST Zip	Contact Name
Idaho Department of Fish & Game	P.O. Box 1336	Salmon, Idaho 83467	Pat Marcuson

NPPC Program Measure Number(s) which this project addresses.

7.7, 7.8G, 7.8H, & 7.10

NMFS Biological Opinion Number(s) which this project addresses.

NMFS letter dated January 10, 1996 concurring with Bureau of Reclamation Biological Assessment of Task I "would not adversely affect listed or proposed species or their critical habitat". NMFS currently reviewing Biological Assessment

of Task II & III.

Other planning document references.

If the project type is “Watershed” (see Section 2), reference any demonstrable support from affected agencies, tribes, local watershed groups, and public and/or private landowners, and cite available documentation.

Task IV (FY-99) supported by Sho-Ban Tribe, Idaho Department of Fish & Game, National Marine Fisheries Service, U.S. Fish & Wildlife Service, Lemhi-Pahsimeroi-East Fork Model Watershed Program, and participating local irrigation companies and private landowners.

Subbasin.

Salmon River

Short description.

Construct new fish screen on Challis Canal (S-32) to NMFS criteria.

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
X	Anadromous fish	X	Construction	X	Watershed
+	Resident fish		O & M		Biodiversity/genetics
	Wildlife		Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate		Monitoring/eval.	+	Flow/survival
	Other		Resource mgmt		Fish disease
			Planning/admin.		Supplementation
			Enforcement		Wildlife habitat en-
			Acquisitions		hancement/restoration

Other keywords.

Enhance juvenile passage, survival, fish screen

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9401500	Idaho Fish Screening Program	Augments IDF&G fish screening program
9306200	Salmon River Anadromous Fish Passage Enhancement, Idaho	Augments Model Watershed fish passage program

Section 4. Objectives, tasks and schedules

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Reduce juvenile entrainment & enhance juvenile passage & survival	a	Construct fish screen on Challis Canal (S-32) to NMFS criteria.

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	1/99	04/00	100

Schedule constraints.

Funding must be available to coincide with the non-irrigation season. Fish screen construction is only possible from November 1st to mid-December and late February to April 15th.

Completion date.
2002

Section 5. Budget

FY98 budget by line item

List FY98 budget amounts for each category. If an item needs more explanation, provide it in the Note column. If the project uses PIT tags, include the cost (\$2.90/tag). **Be sure to enter a total on the last line: this is the amount of your budget request.**

Item	Note	FY98
Personnel	IDFG engineering, design, survey & inspection of fish screen @ \$42,500	\$42,500
Fringe benefits	Included with Personnel above	
Supplies, materials, non-	Screen fabrication labor & materials @	\$97,750

expendable property	\$97,750	
Operations & maintenance		
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		
PIT tags	# of tags:	
Travel		
Indirect costs	CS&WCD administration (5%) @ \$21,250	\$21,250
Subcontracts	Screen civil works @ \$284,750	\$284,750
Other		
TOTAL		\$446,250

Contributions

Although not specifically requested in the FY-99 Funding Proposal it is important to note several state and federal agencies as well as private individuals have made significant financial contributions to this project (Tasks I, II & III) to date. They are: (Contributions include direct salaries, benefits, overhead, & travel or contract cost. All FY-98 costs are projected).

- a. BoR (FY-95) Appraisal Study of options including siphon, pumping,-- and conversion to sprinkler irrigation. \$ 24,000
- b. BoR (FY-96 & 97) Challis & Gine canal surveys----- \$ 7,000
IDF&G (FY-98)(contracted) additional canal survey----- \$ 10,000
- c. BoR (FY-96 & 97) (contracted) cultural & historical survey----- \$ 7,000
BoR (FY-98) (contracted) On-site inspection during construction---- \$ 3,000
- d. BoR (FY-96/97) Planning & Project Coordination----- \$ 45,500
BoR (FY-98) Planning & Project Coordination----- \$ 12,000
- e. NRCS (FY-97) Engineering Appraisal Study of S-26 options----- \$ 2,000
NRCS (FY-98) Engineering Assistance of Design Review prior to---- construction. \$ 1,750
- f. NRCS (FY-97) Technical Assistance on pre-design options & cost---- estimates. \$ 4,500
NRCS (FY-98) Technical Assistance for on-farm construction.----- \$ 2,200
- g. BoR (FY-98) Design of Gini Canal diversion berm, headgate, trashrack, canal enlargement, & bifurcation structure. \$ 35,000
- h. On-farm sprinkler system designs (private landowner provided)----- \$ 1,800
- I. Pivot sprinkler, pump, and power to be provided by Joe Chester----- \$ 35,000
(landowner-FY-98).
- j. Vegetation removal, canal filling & fence rebuilding to be provided by-Ray Laverty (landowner-FY-98). \$ 20,000

Sub-total of Contributions----- \$210,750

Outyear costs

Outyear costs	FY1999	FY2000	FY2001	FY2002
Total budget	\$446,250	\$1,000,000	\$250,000	\$250,000
O&M as % of total	0%	0%	0%	0%

Section 6. Abstract

The goal of this task (IV) will reduce juvenile migration delay and improve juvenile survival by constructing a new fish screen meeting NMFS criteria on the Challis Canal (S-32).

The overall goal of this multi-year project has been to reduce the number of irrigation diversions and enhance instream flows through water conservation measures on the Salmon River. Eliminating diversions reduces opportunities for juvenile entrainment and migration delay, eliminates the need for irrigators to enter the river with heavy equipment up to twice a year to construct “push-up” gravel diversion berms, and converting some irrigators from flood to sprinkler irrigation enhances instream flows. The elimination of the Keyes, Lower McGowan, and Upper McGowan canals and conversion of several irrigators from flood to sprinkler irrigation completed in Task I (FY-96) resulted in a savings of about 9,000 acre feet annually. The elimination of the Laverty (S-29) diversion (task II & III) will result in about 10,800 acre feet less water diverted annually that will remain in the Salmon River

Section 7. Project description

a. Technical and/or scientific background.

This task will improve juvenile passage and survival by providing a fish screen meeting NMFS criteria.

The elimination of the Keyes, Lower McGowan, and Upper McGowan canals consolidation with the Challis Canal (S-32) and conversion of several irrigators from flood to sprinkler irrigation was completed in Task I (FY-96) resulted in a savings of about 9,000 acre feet annually.

Hundreds of irrigation diversions that provide surface water for irrigating pasture land and hay crops occur throughout the Salmon River basin. A 1992 Idaho Fish and Game survey identified 278 gravity irrigation diversions that are located in critical migratory habitat areas that are occupied by Snake River sockeye, spring/summer chinook salmon, steelhead and bulltrout.

The S-32 (Challis Canal) is the second largest irrigation diversion on the entire Salmon River system. During low flow conditions in spring and fall, which coincides with peak smolt out migration, the Challis Canal Company may construct a gravel berm across the entire Salmon River thereby funneling a high percentage of all fish into their diversion.

The “push-up” inriver gravel berms cause upstream and downstream passage problems for salmon and steelhead and extraordinary maintenance problems for the water users. Presently, the migration of anadromous fish is severely impacted by the current irrigation systems configuration. The physical barriers of the diversion berms and reduced instream water flows as a result of the berms impact the migration of adult fish in their upstream migration. Prior to the completion of Task I (FY-96) juvenile fish migration was affected due to the need to pass through four (4) separate screening facilities on the Challis, Keyes, Upper McGowan, and Lower McGowan canals. The successful completion of Task I eliminated the Keyes, Upper McGowan, and Lower McGowan canals by consolidating them all into the Challis Canal. Task IV (FY-99) is now to screen the Challis Canal (S-32) to NMFS screen criteria.

The Challis Canal (S-32) is located on the Salmon River (river mile 333) in east central Idaho near the town of Challis, in Custer County.

b. Proposal objectives.

The primary objective of this task is to implement actions (fish screen construction) that will improve passage and survival of juvenile salmon and steelhead plus resident fish in the upper Salmon River near Challis, Idaho. In addition, the completion of Task I (FY-96) of this multi-year Project (consolidation of the Keyes, Upper McGowan, & Lower McGowan with the Challis Canal) improved irrigation efficiency and conserved water for enhanced instream flow by decreasing irrigation water demand from the Salmon River and eliminated three (3) gravity diversions.

Completion of Task I (FY-96) resulted in several important benefits for ESA listed fish species. Instream flows were increased due to improved Irrigation efficiency, migration of sockeye, chinook, and steelhead will be positively affected due to a reduction of fish passage obstacles in the Salmon River. The new fish screen will provide safe juvenile passage conditions by reducing migration delay and increasing juvenile survival with a screen meeting NMFS criteria.

c. Rationale and significance to Regional Programs.

Objectives of this Task (IV): Reduce juvenile migration delay and mortalities by

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providing a new fish screen that meets NMFS criteria. These objectives are all consistent with the Councils 1994 F&WP Measures 7.10, 7.8G, 7.8H, and 7.7 respectively.

d. Project history

Task I of this project (9600700) in FY-96 was on the Salmon River near Challis, Idaho and was the consolidation of the Upper McGowan, Lower McGowan, and Keyes canals with the Challis canal and conversion of several flood irrigators to sprinkler irrigation. The canal furthest upstream, the Challis, was enlarged from a capacity of 120 cfs to 170 cfs. The Upper McGowan, Lower McGowan, and Keys canals were then plugged and abandoned. Water users in the lower three canals transferred their legal point of diversions with the Idaho Department of Water Resources to the Challis canal. With the conversion of several ranches to more efficient sprinkler irrigation the amount of water now diverted from the Salmon River was reduced by about 9,000 acre feet annually that remains in the Salmon River enhancing instream flows for ESA listed and resident fish species. The construction phase of Task I was started in February 1996 and completed in June 1996.

Task II of the project (FY-97) is the consolidation of the Laverty (S-29), Hammond/Leaton (S-26), and Chester river pump with the Gini canal (S-28) along with conversion of Laverty & Cutler ranches to sprinkler systems.

Task III (FY-98) was a request for additional funding to complete the consolidation work described in Task II above plus the construction of a fish screen to NMFS criteria on the Gini canal (S-28) after the consolidation work is complete.

e. Methods.

Construction

Construction will consist of the following activities:

4. Construction of a new fish screen to replace the existing screen. The fish screen will meet NMFS criteria and will be designed by the Idaho Department of Fish & Game. Construction of the new fish screen will occur after the 1999 irrigation season and before the 2000 season. Design flow will be 170 cfs.

Prior to construction the Custer Soil & Water Conservation District (CS&WCD) will enter into an agreement with the Idaho Department of Fish & Game (IDF&G). IDF&G will contract for the screen civil works. The Idaho Department of Fish and Game will design the new fish screen and provide construction supervision and inspection when the new fish screen is constructed starting in October 1999. The

IDFG will continue to be responsible for operation and maintenance of this screen. Fish screen construction will start in late October 1999 after the irrigation season ends. The Gini canal will be dry during all construction activity.

Construction is limited to the non-irrigation season (November through April), severe winter weather conditions (typically December-February), and low water conditions for in-river work.

Environmental Evaluation

Hydrology

The climate of the Salmon River Valley near Challis can easily be described as cold desert. Annual rainfall varies greatly throughout Custer County with mountaintops receiving about 40 inches of precipitation annually and valley areas receiving less than 10 inches. Average annual precipitation at Challis is 7 inches.

The Salmon River, upstream of the project area, drains about 2,800 square miles. The long-term flow measurement point on the Salmon River, nearest the project, is about 73 miles downstream at RM 259 near the town of Salmon which measures flows from a drainage area of about 3,760 square miles. Mean annual discharge at Salmon is about 642,000 acre-feet. Flows normally peak in June and then decrease through summer until September. Average monthly flows at Salmon range from a high of 11,790 cfs in June to a low of 445 cfs in August.

Water Quality

The construction of the Challis Canal fish screen will not impact water quality as all construction will be done “in the dry” during the non-irrigation season. The fish screen is located in the Challis Canal almost two (2) miles below the headgates.

Reclamation and the Natural Resource Conservation Service will assure that the appropriate federal, state, and local permits are obtained before construction. Any conditions included in these permits will be made a part of contract specifications.

Fish and Wildlife

Important fish species using the Salmon River in the project area include the anadromous spring/summer chinook salmon, sockeye salmon, and steelhead. While sockeye and spring chinook salmon do not spawn in or near the proposed project

site, this area acts as a migration corridor for juveniles and adults. Resident fish species such as rainbow, cutthroat, bull trout and mountain whitefish also occur in the area. Many of the native resident species face the same passage problems as salmon and steelhead during their up and downstream movements.

The new Challis Canal fish screen will have a positive effect on all juvenile fish species that move through this reach of the Salmon River. Benefiting species would include spring/summer chinook salmon, sockeye salmon, steelhead and all of the native resident species occurring in the Salmon River.

Endangered Species

Three species of fish currently listed under the Endangered Species Act occur in the project area: sockeye salmon (endangered), spring/summer chinook salmon (threatened), and steelhead (threatened). Bull trout are being considered for listing.

Migration of adult sockeye salmon in the Salmon River to Redfish Lake begins as early as July and continues through October. Arrival at Redfish Lake (50 miles upstream from the task site) peaks in August. Migrant juvenile sockeye salmon leave Redfish Lake from late April through May. Downstream migration of chinook, sockeye, and steelhead smolts coincides with the start of the irrigation season. Instream flows are low at this time as “runoff” of the mountain snow pack is normally in mid to late June. Because instream flows are low, irrigators must construct the “push-up” gravel berms which results in a high percentage of smolts becoming entrained in the canals and delayed on their migration.

Migration of adult spring/summer chinook salmon in the Salmon River (near Challis) begins in early June and continues throughout the summer until about the end of September. Peaks in upstream movement usually occur in mid-July. Downstream movement of spring chinook juveniles occurs throughout most of the year. The out migration of pre-smolts occurs from January to June with the peak out migration in April and May and mid-September through mid-November.

Completion of task (IV) will benefit juvenile sockeye, spring/summer chinook salmon, and steelhead.

The construction schedule will be coordinated with the Idaho Department of Fish & Game (IDFG), National Marine Fisheries Service (NMFS), and the Fish and Wildlife Service (FWS).

The Salmon River has been designated by NMFS as critical habitat for sockeye and spring chinook salmon. This task will not disturb the river in the project area. The project will provide a beneficial long-term effect on critical habitat by improving fish passage conditions on the Salmon River near Challis, Idaho.

f. Facilities and equipment.

Not applicable. IDF&G has existing facilities and equipment necessary for screen design and fabrication. The screen civil works will be contracted.

g. References.

Bevan, D., J. Harville, P. Bergman, T. Bjornn, J. Crutchfield, P. Klingeman, J. Litchfield. 1994. Snake River Salmon Recovery Team: Final Recommendations to National Marine Fisheries Service. Dated May 1994.

Section 8. Relationships to other projects

This Task complements the ongoing fish screen program of the Idaho Department of Fish & Game.

Section 9. Key personnel

Custer County Soil & Water Conservation District (S&WCD):

Lida Robinson, Chair - Mrs. Robinson is the chair of the S&WCD and is experienced in working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and was overall responsible for the FY-96 Challis consolidation Task I.

Rick Philips, Secretary/Treasurer & Contracting Officer - Mr. Philips has experience working with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and was the contracting officer for the S&WCD for the FY-96 Challis consolidation Task I.

Karma Bragg, Administrative Assistant - Mrs. Bragg has experience in BPA Grant processing and administration in working with the Lemhi-Pahsimeroi-East Fork Model Watershed Program and with the Challis consolidation Task in FY-96.

Other S&WCD Board Members - Mr. Ted O'Neal; Vice-Chair, Mr. Jim Dowton, and Mr. Wayne Baker. These are all local landowners and have experience with BPA Grants through the Lemhi-Pahsimeroi-East Fork Model Watershed Program and in working with the BPA Grant for the Challis consolidation Task in FY-96.

Mark Olson, Soil Conservationist - Mr. Olson is employed by the Natural Resources Conservation Service in Challis, Idaho and provides technical expertise for Task completion. Mr. Olson has worked for the NRCS since 1985 and has a degree in agronomy from the Utah State University in 1988. Mark also has experience with BPA Model Watershed Grants and worked on the Challis consolidation Task I.

Chuck Keller, Fishery Program Manager - Mr. Keller is employed by the Bureau of Reclamation in Salmon, Idaho and provides assistance to the CS&WCD

in budget proposals and program coordination. He served as the Idaho Fish Screen Program Coordinator from 1992-1995 under an Interagency Personnel Agreement from Reclamation to the Idaho Department of Fish & Game. Mr. Keller has worked for the federal government since 1972 and has a BS degree in fisheries biology from the University of California; Humboldt in 1970. He also worked on the Tasks I, II, & III.

Mr. Matt Hightree, Engineer - Mr. Hightree is employed by the Idaho Department of Fish & Game in Salmon, Idaho and will provide all engineering and specifications necessary of the construction of the S-32 fish screen.

Section 10. Information/technology transfer

The completion of Task I (Challis consolidation) has been identified by the Northwest Power Planning Council as a successful project where irrigators and fisheries interests all benefitted. A story on the Challis consolidation success will soon appear as a feature article by the Council.

The completion of Tasks II & III will further enhance the trust level and cooperation between tribal, federal, state entities working with private landowners on other Council Fish and Wildlife Projects throughout the northwest.